

CLAIMS :

5 1. A surgical device comprising two or more modular units including at least a cannula section and an applicator section, wherein the device is suitable for delivery of at least one fluid during surgery and is capable of being provided in a sterilized condition.

10 2. A system for construction of a surgical device, wherein the device is assembled from two or more modular units including at least a cannula section and an applicator section, wherein the device is suitable for fluid delivery of at least one fluid during surgery and is capable of being provided in a sterilized condition.

15 3. A method for conducting endoscopic surgery, the method comprising the use of a surgical device, wherein the device is assembled from two or more modular units including at least a cannula section and an applicator section, wherein the device is suitable for delivery of at least one fluid during surgery and is capable of being provided in a sterilized condition.

4. A device according to Claim 1, wherein the device further comprises at least one adapter section.

20 5. A device according to Claim 1, wherein the device further comprises an articulated joint.

6. A device according to Claim 1, wherein the device further comprises a snap-fit ball and socket joint.

25 7. A device according to Claim 1, wherein the device further comprises at least one joint having both a taper fit connection and a snap-fit ball and socket connection.

8. A device according to Claim 4, wherein the device further comprises at least one of a valve and a limiting orifice.

30 9. A method according to Claim 3, in which the fluid is a fluid which forms at least one

structure at the application site.

10. A method according to Claim 9, in which said structure includes sealings, adhesives, pavings, coatings, barriers, drug delivery depots, and tissue engineering matrices.

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11. A method according to Claim 9, in which said fluid forms the structure at the site by at least one of precipitation, coacervation, gelation, spontaneous reaction, or reaction stimulated by application of energy.

10 12. A device according to Claim 1, wherein said device is assembled from modules wherein at least one module comprises a molded part.

13. A device according to Claim 1, wherein at least one module has the attribute of at least one of radio-opacity; color-coding; controlled flexibility; lack of magnetic responsiveness; 15 intraoperative removability; and passability therethrough of optical fibers or sensors.

14. The device of Claim 1, wherein said applicator is at least one of an open tube; a brush; a roller; a pad; a paddle; a nozzle; a molding member; and an expandable member.

15. A device according to Claim 1, wherein the device is sterilizable by at least one of 20 gamma irradiation, electron-beam irradiation, ethylene oxide sterilization, plasma treatment, and autoclaving.

25 16. A kit for performing a surgical procedure, comprising a device according to claim 1 in combination with at least one of a propulsion means for fluid, a fluid to be dispensed, and a container for a fluid.

17. A kit for performing a surgical procedure comprising a sterilizable device with two or more units removably attachable to each other, wherein the device is constructed and arranged for passage through a cannula and capable of delivering a therapeutic agent for application to 30 a treatment site internally of a patient.

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18. A kit for performing a surgical procedure comprising a sterilizable device with two or more units removably attachable to each other at an articulating joint, wherein the device is constructed and arranged for delivering a therapeutic agent for application to a treatment site internally of a patient.

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19. A kit according to claims 17 or 18, wherein the therapeutic agent is selected for treatment of a predetermined medical condition.

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20. A kit according to any of claims 17-19, wherein the two or more units are removably attachable to each other at a location that passes into a cannula during use.

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21. A kit according to any of claims 17-20, wherein the two or more units are removably attachable to each other at a location that passes through a cannula into a surgical treatment area during use.

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22. The kit according to any of claims 17-21, wherein the two or more units removably attachable to each other include at least a cannula section and at least an applicator section.

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23. The kit according to any of claims 17-22, wherein at least one of the units is removably attachable to another of the units at an articulated joint.

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24. The kit according to claim 23, wherein the articulated joint facilitates at least 90° rotational movement of a distal portion relative to a proximal portion.

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25. The kit according to claim 23, wherein the articulated joint facilitates at least 180° rotational movement of a distal portion relative to a proximal portion.

26. The kit according to claim 23, wherein the articulated joint facilitates a 360° rotational movement of a distal portion relative to a proximal portion.

27. The kit according to any of claims 17-26, wherein at least one of the units removably

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attachable to each other comprises a snap-fit ball and socket joint.

28. The kit according to any of claims 17-27, wherein at least one of the units removably attachable to each other comprises at least one joint having both a taper fit connection and a 5 snap-fit ball and socket connection.

29. The kit according to any of claims 17-28, wherein at least one of the units removably attachable to each other comprises at least one of a valve limiting orifice.

30. The kit according to any of claims 17-29, wherein at least one of the units removably attachable to each other further comprises a molded part. 10

31. The kit according to any of claims 17-30, wherein at least one of the units removably attachable to each other has the attribute of at least one of radio-opacity; color-coding; 15 controlled flexibility; lack of magnetic responsiveness; intraoperative removability; and passability therethrough of optical fibers or sensors.

32. The kit according to claim 22, wherein the applicator is at least one of an open tube; a brush; a roller; a pad; a paddle; a nozzle; a molding member; and an expandable member. 20

33. The kit according to claim 22, wherein the applicator is sterilizable by at least one of gamma irradiation, electron-beam irradiation, ethylene oxide sterilization, and autoclaving.

34. The kit according to claims 32 or 33, wherein the applicator is a brush. 25

35. The kit according to claims 17 or 18, comprising at least three or more units removably attachable to each other.

36. The kit according to claim 35, wherein at least two or more of the units removably attachable to each other slidably connect to one another in fluid communication with one another to form an articulated joint. 30

37. The kit according to claim 35, wherein at least three or more of the units removably attachable to each other slidably connect to one another in fluid communication with one another to form an articulated joint.

5 38. The kit according to claim 35, wherein at least three or more of the units removably attachable to each other interchangeably connect to one another.

10 39. The kit according to claim 22, wherein at least two of the units are removably attachable at an articulated joint, the articulated joint further comprising a first slidably connectable piece and a second slidably connectable piece.

15 40. The kit according to claim 39, wherein the first slidably connectable piece is affixed to the cannula section and the second slidably connectable piece is affixed to the applicator section.

41. The kit according to claim 40, further comprising a third unit interchangeably attachable at the articulated joint between the cannula section and the applicator section.

42. The kit according to claim 41, wherein the third unit comprises a bent cannula.

20 43. The kit according to claim 42, wherein the bent cannula comprises a 45° bend along a longitudinal axis.

25 44. The kit according to claim 42, wherein the cannula section further comprises a straight cannula.

45. The kit according to claim 42, wherein the applicator section comprises a brush.

30 46. A kit for performing a surgical procedure, comprising:
a device with two or more units including at least a cannula section and an applicator section removably attachable to each other, at least a portion of the device being capable of

passage through a cannula for delivery of a therapeutic agent during surgery and the device capable of being provided in a sterilized condition; and

5 a third unit capable of being supplied in a sterilized condition and capable of being added to the device or interchanged with at least one unit of the device during said surgical procedure.

47. A method of conducting surgery, the method comprising:

10 accessing a treatment site with a first device through a cannula, wherein the first device is a single component device or a multicomponent device;

delivering a therapeutic agent to the treatment site via the first device;

15 altering the first device to form a second device by carrying out at least one of adding a component to the first device, removing a component from the first device, and replacing a component of the first device with another component; and

delivering a therapeutic agent to the treatment site via the second device.

48. A method according to claim 47, further comprising:

accessing the treatment site with the first device through the cannula, wherein the first device comprises two or more units including at least one cannula section and an applicator section;

20 delivering a therapeutic agent to the site via the first device;

altering the first device to form the second device by removing the applicator section from the first device and adding a second applicator section; and

delivering a therapeutic agent to the treatment site via the second device.

25 49. A system comprising:

a surgical device constructed and arranged for sterile passage through a cannula and able to deliver a therapeutic agent to a treatment site internally of a patient, the device including at least one joint, at a portion of the device constructed to be passed through the cannula, that facilitates bending of the device.

30 50. A system as in claim 49, wherein the device includes a proximal portion and a distal

portion separated by the joint, and the joint facilitates rotational movement of the distal portion relative to the proximal portion.

51. A system as in claim 50, wherein the distal portion is removably attachable to the proximal portion.

52. A system as in claim 50, wherein the distal portion is removably attachable to the proximal portion at the joint.

10 53. A system as in claim 50, wherein the joint facilitates at least 90° rotational movement of the distal portion relative to the proximal portion.

54. A system as in claim 50, wherein the joint facilitates at least 180° rotational movement of the distal portion relative to the proximal portion.

15 55. A system as in claim 50, wherein the joint facilitates 360° rotational movement of the distal portion relative to the proximal portion.

56. A system as in claim 55, wherein the distal portion is removably attachable to the proximal portion.

20 57. A system as in claim 55, wherein the distal portion is removably attachable to the proximal portion at the joint.